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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GHEBRETINSAE, TEMESGHEN	
ART UNIT	PAPER NUMBER
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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Commissioner for Patents

Temesghen Ghebretinsae
Primary Examiner
Art Unit: 2611

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/064,269
Filing Date: June 27, 2002
Appellant(s): LYLE ET AL.

Robert A. Voigt Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/15/07 appealing from the Office action mailed 2/9/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

The rejection of claims 1-20 based on Treister reference (us2002/0116460) has been withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al.

Gan discloses a wireless communication system providing for communication over two or more channels utilizing a communications architecture that calls for hopping from channel to channel during data transmission as claims in claim 1 preamble {see abstract; col. 1, lines 42-50} and a wireless communication system proving for communication in the ISM communication frequency band by a communication device operating according to the Bluetooth standard as claimed in claim 11 preamble and according to the IEEE 802.15.1 standard as claimed in claim 17 preamble {see col.7, lines, 51-65 col. 8, lines 1-13}

"In block 132, a set of communications channels is selected by comparing the performance data determined in block 130 to performance criteria to determine whether each channel is good or bad. Then a set of channels is selected that includes only good channels. For example, channels 25 30 of the original 79 channels of the Bluetooth or IEEE 802.15.1 FH communications system examples above may be classified as bad due to interference from an NFH communications system, resulting in the selection of channels 0 24 and 31 78 for the channel set.

(31) In block 134, channel identification data is generated that identifies the set of selected communications channels. For example, in the Bluetooth or IEEE 802.15.1 FH communications system examples above, a reduced frequency hopping sequence that uses good channels 0 24 and 31 78 may be selected, or alternatively, bad channels 25 30 may be replaced by randomly-selected good channels in the normal hopping sequence.

(32) In block 136, the channel identification data identifying the selected set of communications channels is provided to the participant. For example, in the Bluetooth or IEEE 802.15.1 FH communications system examples above, the master may provide a slave with information on which channels are selected and/or not selected in block 132 (e.g., channels 0 24 and 31 78)."

the method comprising:

scanning (selecting) the channels for interference and identifying channels experiencing interference (or upon power up of the device, scanning the available channel for interference and identifying channels experiencing interference)

transmitting normal data when hopping to a channel not identified as experiencing interference;

{see abstract; col.3, line 49 to col.4, line 6 and col.5, lines 63-67}

"Techniques are provided for selecting sets of communications channels based on channel performance. According to one aspect of the invention, a method selects communications channels for a communications system. A set of communications channels is selected based on the performance of the communications channels and channel selection criteria."

"An approach for selecting sets of communications channels involves determining the performance of communications channels. A set of channels is selected based on the results of performance testing and specified criteria. The participant generates data that identifies the selected set of channels and provides that data to other participants of the communications network. The participants communicate over the set of channels, such as by using a frequency hopping protocol. When a specified time expires or monitoring of the performance of the channel set identifies poor performance of the set of channels, the participant selects another set of channels for use in communications based on additional performance testing"

"A novel approach for managing network communications generally involves selecting sets of communications channels based on channel performance. An initial set of channels is selected based on one or more selection criteria at the start-up of the communications network. Additional sets of channels are then periodically selected to adaptively avoid interference."

The scanning step is performed upon the commencement of data transmission as

Claimed in claim 2. {See col.5, lines 63-67}

"An initial set of channels is selected based on one or more selection criteria at the start-up of the communications network. Additional sets of channels are then periodically selected to adaptively avoid interference."

The scanning step is performed upon each passage of first time (second etc) period as

claimed in claims 3,7,16,20 (see col.4, lines 1-6)

"According to other aspects, another set of communications channels is selected in a similar manner when a specified criterion is satisfied, including but not limited to, after expiration of a specified length of time, when the performance of at least one of the channels in the set of channels satisfies another performance criterion, or when a specified number of the set of channels satisfies yet another performance criterion."

The scanning step is repeated periodically during data transmission as claimed in claim

4,13,16 (see col.5, lines 63-65)

"Additional sets of channels are then periodically selected to adaptively avoid interference."

The scanning step is performed when data throughput rate falls below a predefined

value or request by a user as claimed in claims 5-7,14-16,18-20(see col.6, lines 10-24)

"An initial set of channels is selected based on one or more selection criteria at the start-up of the communications network. Additional sets of channels are then periodically selected to adaptively avoid interference."

"According to other aspects, another set of communications channels is selected in a similar manner when a specified criterion is satisfied, including but not limited to, after expiration of a specified length of time, when the performance of at least one of the channels in the set of channels satisfies another performance criterion, or when a specified number of the set of channels satisfies yet another performance criterion."

"Additional sets of channels are then periodically selected to adaptively avoid interference."

"In block 114, a set of communications channels to be used is selected based on the channel performance determined in block 110, one or more performance criteria, and one or more selection criteria. For example, a communications system may experience interference on channels 3 through 5 from one communications system and on channels 50 through 54 from another communications system. The channel testing may indicate a high bit error rate (BER) on those channels. Channels may be classified by comparing the test results to the performance criteria. For example, the performance criteria may be a specified value, or a specified threshold. If the BER for a channel exceeds the specified threshold, the channel is classified as "good," whereas channels with a BER that does not exceed the specified threshold are classified as "bad." The reason why a bad channel's performance does exceed the specified threshold may be due to a variety of reasons, including but not limited to, the channel being used by another communications system or noise from other interference sources, such as microwave ovens."

Gan Also transmits a Null packet for synchronizing the transmitter and receiver.(see

col.12, lines 22-32)

"According to another embodiment of the invention, a received signal strength indicator (RSSI) is used to test the performance of communications channels. To determine the RSSI for a channel, a master can either just listen at a slave transmission time slot or the master or send a NULL packet to a slave to ensure that the slave will not transmit at the next slave transmission time slot. A NULL packet generally includes only an access code and a packet header and is typically used to ensure that the master and slave are synchronized. When a slave receives a NULL packet, there is no return packet sent from the slave to the master."

Gan differs from the claimed invention in that he does not transmit Only Null packets when hopping to a channel identified as experiencing interference as claimed in claims 1, 12 and 17. The reasoning behind it is that to avoid the need to re-transmit packet or data, which are lost due to being transmitted on channels experiencing interference.(see col.3,lines 17-20). Thus, transmitting Null packet on channels experiencing interference is functionally equivalent to not transmitting on channels experiencing interference since both solve the same problem which is to avoid the need to re-transmit packets which are lost or garbled due being transmitted on channels experiencing interference.(see Gan et al col.3, lines 16-20 and the current application paragraph {0023})

"Interference results in data transmission errors, such as an increase in the bit error rate (BER) or the loss of data packets, resulting in reduced transmission quality and performance and the need to retransmit the data."

Curent application

" When hopping to such identified channels, the device transmits only null packets, thus avoiding the need to re-transmit packets due to interference and mitigating the effects of such interference on the communications data rate"

" If it is hopping to a channel currently marked as experiencing interference, only null packets, that is, packets containing no data, are transmitted on such channel. If it is hopping to a channel that is not currently marked as experiencing interference, normal data packets are transmitted. In this way, the device avoids the need to re-transmit packets which are lost or garbled due to being transmitted on channels experiencing interference. Since the device knows that only null packets were transmitted on those channels, any packets lost or garbled on those channels can simply be ignored. "

(10) Response to Argument

Regarding claims 1,12,17.Applicant argues that examiner has not provide "extrinsic evidence that make clear that Gan's teaching of not transmitting on channels identified as being bad equates with transmitting only null packets when hopping to channel identified as experiencing interference".

However, examiner did provide the teaching that "transmitting Null packet on channels experiencing interference" is functionally equivalent to "not transmitting on channels experiencing interference" **since both solve the same problem which is to avoid the need to re-transmit packets which are lost or garbled due being transmitted on channels experiencing interference.** (see col.3, lines 16-20) Thus, given the lack of statement of purpose for transmission of Null packet with the exception "to avoid the need to re-transmit packets which are lost or garbled due being transmitted on channels experiencing interference" (see current application abstract and paragraph{0023}) it appears that there is equivalency between these functions as they are both avoiding interference channels.

Regarding argument No.2, see col. 5, lines 61-67.

"A novel approach for managing network communications generally involves selecting sets of communications channels based on channel performance. An initial set of channels is selected based on one or more selection criteria at the start-up of the communications network. Additional sets of channels are then periodically selected to adaptively avoid interference."

Regarding argument No.3 and 4. {see col.5, lines 63-67}

"An initial set of channels is selected based on one or more selection criteria at the start-up of the communications network. Additional sets of channels are then periodically selected to adaptively avoid interference."

"According to other aspects, another set of communications channels is selected in a similar manner when a specified criterion is satisfied, including but not limited to, after expiration of a specified length of time, when the performance of at least one of the channels in the set of channels satisfies another performance criterion, or when a specified number of the set of channels satisfies yet another performance criterion."

Regarding argument No.3 b (see col.4, lines 1-6)

"According to other aspects, another set of communications channels is selected in a similar manner when a specified criterion is satisfied, including but not limited to, after expiration of a specified length of time, when the performance of at least one of the channels in the set of channels satisfies another performance criterion, or when a specified number of the set of channels satisfies yet another performance criterion."

Regarding argument 3c (see col.5, lines 63-65)

"Additional sets of channels are then periodically selected to adaptively avoid interference."

Regarding argument No. 3d and 3e (see col.6, lines 10-24)

"In block 114, a set of communications channels to be used is selected based on the channel performance determined in block 110, one or more performance criteria, and one or more selection criteria. For example, a communications system may experience interference on channels 3 through 5 from one communications system and on channels 50 through 54 from another communications system. The channel testing may indicate a high bit error rate (BER) on those channels. Channels may be classified by comparing the test results to the performance criteria. For example, the performance criteria may be a specified value, or a specified threshold. If the BER for a channel exceeds the specified threshold, the channel is classified as "good," whereas channels with a BER that does not exceed the specified threshold are classified as "bad." The reason why a bad channel's performance does exceed the specified threshold may be due to a variety of reasons, including but not limited to, the channel being used by another communications system or noise from other interference sources, such as microwave ovens."

Regarding argument 3f see response to argument 3a to 3e.

For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

Temesghen Ghebretinsae

TEMESGHEN GHEBRETINSAE
PRIMARY EXAMINER

Conferees:

Mohammed Ghayour

Chieh Fan